Cotton/Soybean Insect Newsletter

Volume 15, Issue #6 Edisto Research & Education Center in Blackville, SC 11 June 2020

Pest Patrol Alerts

The information contained herein each week is available via text alerts that direct users to online recordings. I will update the short message weekly for at least as long as the newsletter runs. After a new message is posted, a text message is sent to alert users that I have recorded a new update. Users can subscribe for text message alerts for my updates in two easy steps. Step one: register by texting **pestpat7** to 97063. Step two: reply to the confirmation text you receive by texting the letter "y" to complete your registration. Pest Patrol Alerts are sponsored by Syngenta.

Updates on Twitter

When noteworthy events happen the in the field, I will be sending them out quickly via Twitter. If you want to follow those quick updates, follow me at **@bugdocisin** on Twitter.

News from Around the State

No news reported this week. Please regularly send me updates on insect activity in cotton or soybeans in your area. This section is your chance to let others know what you are seeing in your area. The more eyes we have out there noticing and reporting insect activity, the more we can benefit from the "heads up" on what might be coming our way. Localized problems detected early can warn others, so let me know. I will post the information here and give you credit or keep the information anonymous, if you do not want to be identified. Thanks!

Have a Minute for a Short Survey?

This section of the newsletter contains a survey link from last week. If you did not participate last week, you can this week, if you wish. The questions pertain to Bt corn and how options with that crop affect management of insects later in cotton. So, if you grow corn or manage insects in the crop, please click on the link below and answer the short survey (takes only a minute or two), if you have time. It would be much appreciated. This survey will be active for another week. I will report the results back here, if enough folks complete the survey (providing meaningful results to summarize). Thanks!
https://clemson.ca1.qualtrics.com/jfe/form/SV_8BRCf4byzUKE4yV

Cotton Situation

As of 7 June 2020, the USDA NASS South Carolina Statistical Office estimated that about 83% of the crop has been planted, compared with 73% at this time last week, 97% at this time last year, and 90% for the 5-year average. About 4% of the crop is squaring, compared with 0% at this time last week, 2% at this time

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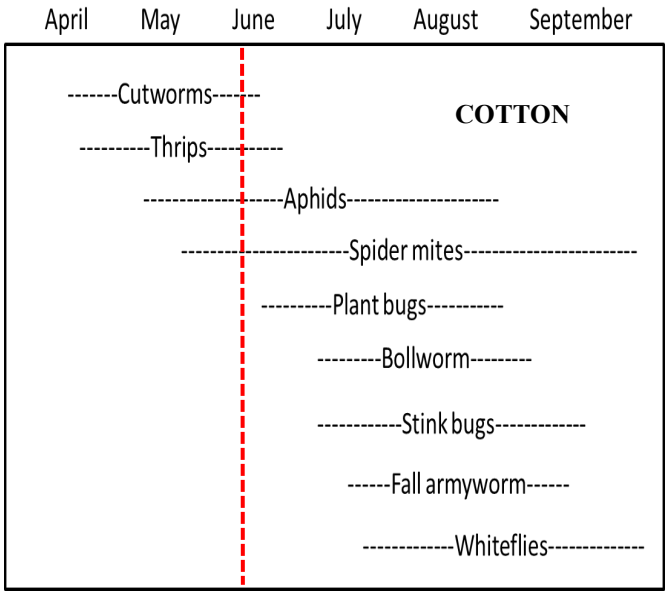
last year, and 3% for the 5-year average. The condition of the crop was described as 4% excellent, 46% good, 25% fair, 15% poor, and 10% very poor. These are observed/perceived state-wide averages.

Cotton Insects



Midway through June usually means we are almost completely finished with thrips, but late-planted cotton might still be experiencing issues with the pest group. Most of our acres are in that window between managing thrips on seedling cotton and blooming cotton, where we deal with stink bugs and bollworm escaping through Bt toxins. Right now is when we need to be checking for plant bugs, aphids, and spider mites.

As I mentioned last week, we will have some help with control of plant bugs in the future with Bt technology designed to withstand injury from the pest group. This technology will help us with thrips and plant bugs. In the Southeast, it might be all that we need for control of the tarnished plant bug because most of our fields do not experience problems with plant bugs. Only time will tell on that, but it will certainly help. Most of the benefit of the Lygus/Thrips trait to us will be on thrips side.

Here is our instant-view threshold guide with aphids, plant bugs, and spider mites highlighted. We will talk about each on the next page.

"Instant –View" Threshold Guide

Insect	Number per unit
Stink bugs (SB)	Stink bugs present with injury (%) to medium-sized bolls by week of bloom: 50, 30, 10, 10, 10, 20, 30, 50%; weeks 3-5 important at 10% injury
Bollworm *2nd & 3rd generation Bt cotton*	After 1st bloom, consider treatment near peak egg lay or > 1 egg/plant, 3 or more larger (>0.25 inch) larvae per 100 plants, or 5% boll damage
Bollworm *Non-Bt cotton*	After 1st bloom: 20 or more eggs or 3 small (<0.25 inch) larvae per 100 plants or 5% damaged squares
Tobacco budworm (TBW) *Non-Bt cotton only – not found in Bt cotton*	Before 1st bloom: 15 small (<0.25 inch) larvae per 100 plants or 20% square damage; after 1st bloom: 20 eggs or 3 small larvae per 100 plants or 5% square damage
Tarnished plant bug (TPB)	Square retention below 75% and 8-10 per 100 sweeps or 3 per 6 rowft
Thrips	2 or more thrips per plant (immatures very important) and damage present
Aphids	Plants severely infested and stressed with actively growing colonies present
Fall armyworm (FAW)	10 or more per 100 plants, checking blooms and bolls
Spider mites	50% of plants infested and stressed with actively growing colonies present

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Plant bugs (tarnished plant bug and cotton fleahopper) infrequently cause problems in June and July. Tarnished plant bugs may also puncture small bolls, inflicting damage symptoms similar to that caused by stink bugs. Adults of both species of plant bugs move to cotton from wild host plants. *Lygus* bugs develop in wild hosts such as aster, blue vervain, and fleabane, while fleahoppers are fond of tropic croton and primrose. Both adults and nymphs feed on small squares and other tender plant parts.

PLANT BUGS (COTTON FLEAHOPPER AND TARNISHED PLANT BUG)

Product	Product/acre	Lb ai/acre	Acre/gal	REI	PHI	Comments
sulfoxaflor Transform 50 WG	 1.5-2.25 oz	0.047-0.071	 -	24 hr	14 d	
acephate Orthene/Acephate 97 Orthene/Acephate 90	 4.1-12.3 oz 4.4-13.3 oz	0.25-0.75	 - -	24 hr	21 d	
imidacloprid Couraze 4 F Couraze 2 F Admire Pro 4.6	 1.5-2.0 oz 3.0-4.0 oz 0.9-1.7 oz	0.031-0.0625	 64-83 32-42.6 75-142	12 hr	14 d	
thiamethoxam Centric 40 WG	 2.0-2.5 oz	0.05-0.0625	 -	12 hr	21 d	5 oz limit for season
dicrotophos **(R)** Bidrin 8 E	 4.0-8.0 oz	0.25-0.5	 16-32	6 d	30 d	16 oz limit post bloom
oxamyl **(R)** Vydate 3.77 CLV	 8.5-17.0 oz	0.25-0.5	 7.5-15	48 hr	14 d	
clothianidin Belay 2.13	 3.0-5.0 oz	0.05-0.083	 25.6-42.6	12 hr	Pinhead square	1 application for season
novaluron Diamond 0.83 EC	 9.0-12.0 oz	0.058-0.078	 14.2-21.3	12 hr	30 d	Effective on nymphs only

Plant-bug injury to squares rarely causes economic problems in South Carolina. An economic problem could develop if an early-maturing variety was planted late, an average of 3 plant bugs per 6 rowft is detected using a beat cloth or beat pan, an average of 1 plant bug per 10 sweeps, or 25% or more of pinhead squares have been lost. Cotton in South Carolina is most susceptible to plant bugs around the time of first bloom. Pyrethroid insecticides generally provide control of plant bugs when applied at stink bug/bollworm control rates. Avoid treating Bt cotton for plant bugs unless absolutely necessary in June and July as subsequent reductions in beneficial populations often trigger problems with bollworm or fall armyworm. Plant bugs can also injure small bolls like stink bugs. For combinations of plant and stink bugs feeding on small bolls, use boll-injury treatment thresholds for stink bugs.




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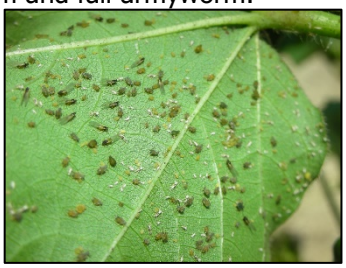
Aphids typically infest plant terminals and uppermost leaves initially. These soft-bodied insects have piercing-sucking mouthparts that are used to suck plant juices from leaves and stems. Heavy infestations on the undersides of leaves produce wilting and cause the leaf margins to curl toward the ground. A parasitic wasp and a fungus, *Neozygites fresenii*, often provide some control of aphids. **Whiteflies** can also damage cotton by sucking plant fluids, but this happens very rarely in South Carolina. These insects are generally controlled by naturally occurring beneficial arthropods before their damage can reduce yields. Both aphids and whiteflies excrete a substance with a high sugar content referred to as honeydew. Heavy infestations of aphids or whiteflies can produce large amounts of honeydew, thereby coating lower leaves, and giving them a shiny appearance. After mature bolls have opened, honeydew may produce sticky lint. Honeydew may also serve as a substrate for the growth of a sooty mold, which stains lint and reduces color grade.

APHIDS

Product	Product/acre	Lb ai/acre	Acre/gal	REI	PHI	Comments
sulfoxaflor Transform 50 WG	 0.75-1.0 oz	0.023-0.031	 -	24 hr	14 d	
pyrifluquinazon PQZ 1.87	 2.4-3.2 oz	0.035-0.047	 40-52	12 hr	7 d	
acetamiprid Assail 30 SG Assail or Intruder 70 WP Strafer Max 70 WG	 1.5-2.5 oz 0.6-1.1 oz 0.6-1.1 oz	0.025-0.05	 - - -	12 hr	28 d	Ovicidal activity on caterpillars
dicrotophos Bidrin 8	 8.0 oz	0.5	 16	6 d	30 d	16 oz limit post bloom
flonicamid Carbine 50 WG	 1.4-2.8 oz	0.044-0.088	 -	12 hr	30 d	
thiamethoxam Centric 40 WG	 1.25-2.0 oz	0.031-0.05	 -	12 hr	21 d	5 oz limit for season
imidacloprid Couraze 4 F Couraze 2 F Admire Pro 4.6	 1.0-2.0 oz 2.0-4.0 oz 0.9-1.7 oz	0.031-0.0625	 64-128 32-64 75-142	12 hr	14 d	
clothianidin Belay 2.13	 3.0-5.0 oz	0.05-0.083	 25.6-42.6	12 hr	Pinhead square	1 application for season

Treat only when high numbers of aphids are severely infesting plants, populations are building, and the margins of terminal leaves are drooping. Aphids will cause more damage when plants are suffering from lack of moisture, and there are few signs of natural control agents. If there is evidence of widespread parasitism (dead aphids, tan colored and swollen in appearance) and/or fungal pathogens (diseased aphid bodies have a grayish-green colored fuzzy appearance) an insecticide should not be applied. Avoid unnecessary insecticide applications, as subsequent reductions in beneficial populations can result in damage from bollworm and fall armyworm.

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Spider mites are occasionally a problem in South Carolina cotton. Infestations of mites are often flared by extremely hot and dry weather conditions. Applications of insecticides (e.g. acephate) for other pests can also flare infestations of spider mites by reducing the numbers of beneficial arthropods that prey upon them. Initial infestations occur from spider mites moving from wild host plants or other crops into border rows of cotton. White-to-yellow speckling on the upper surfaces of leaves (in proximity to petiole attachment) will be the first indication of a mite infestation. As mites continue to feed on the undersides of leaves, the upper surfaces will become reddened. Early recognition of these symptoms and spot treating infested areas will often prevent spider mites from spreading throughout a field.

SPIDER MITES

Product	Product/acre	Lb ai/acre	Acre/gal	REI	PHI	Comments
chlorpyrifos **(R)** Lorsban 4 E or Nufos 4 E Lorsban Advanced 3.755	 16.0 oz 16.0 oz	0.47-0.50 0.50 0.47	 8 8	24 hr	14 d	Do not graze treated areas or use gin trash as feed
bifenthrin **(R)** Discipline 2 EC or Brigade 2 EC or Fanfare 2 EC or Bifenture 2 EC	 3.8-6.4 oz	0.06-0.1	 20-33.7	12 hr	14 d	Higher rates required for adequate control of mites
propargite Comite 6.55 Comite II 6	 16.0-32.0 oz 20.0-36.0 oz	0.82-1.69	 4-8 3.55-6.4	7 d	50 d	Do not apply until plants are 12 in tall
spiromesifen Oberon 2 SC Oberon 4 SC	 8.0-16.0 oz 4.0-8.0 oz	0.125-0.25	 8-16 16-32	12 hr	30 d	Per season 32 oz limit 16 oz limit
etoxazole Zeal 72.7 WSP	 0.66-1.0 oz	0.03-0.045	 -	12 hr	28 d	Max of 1 application
abamectin **(R)** Agri-Mek 0.15 EC or Zoro 0.15 EC	 8.0-16.0 oz	0.009-0.0188	 8-16	12 hr	20 d	32 oz limit per season
fepyroximate Portal 0.4	 16.0-32.0 oz	0.05-0.1	 4-8	12 hr	14 d	Limit of 2 pt per season

Infestations of spider mites usually appear in border rows of a field or sometimes in isolated spots within a field. When mites first appear, treating border rows or spot treating may prevent outbreaks.



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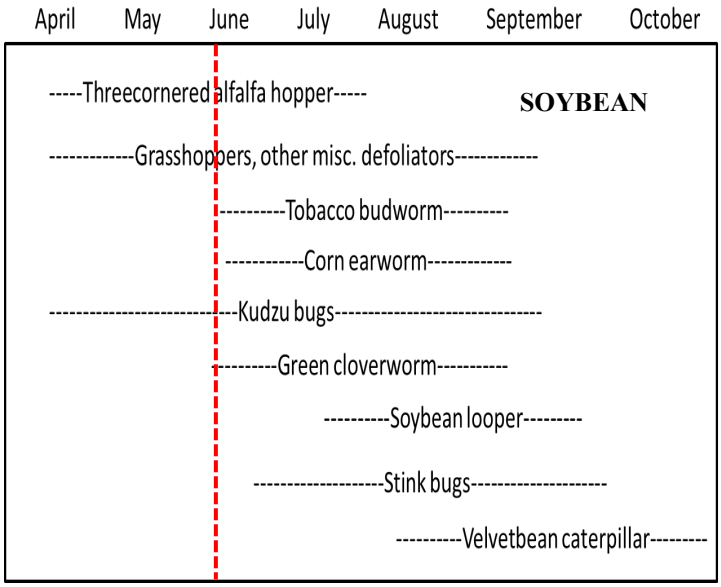
So, right now, monitor square retention, sweep for adult plant bugs, and watch fields for development aphids and spider mites. Start looking for infestations of aphids and symptoms of the Cotton Leaf Roll Dwarf Disease (CLRDD) we have been discussing in recent years. We will talk more about these issues for the next couple of weeks.

Soybean Situation

As of 7 June 2020, the USDA NASS South Carolina Statistical Office estimated that about 54% of the crop has been planted, compared with 49% the previous week, 50% at this time last year, and 61% for the 5-year average. About 40% of the crop has emerged, compared with 33% the previous week, 36% at this time last year, and 42% for the 5-year average. The condition of the crop was not yet described. These are observed/perceived state-wide averages.

Soybean Insects

Again this week, arthropods do not seem to be causing widespread issues in soybeans. I have some soybeans planted during mid-April in a planting date study at Edisto REC, and they are pretty clean at about the V6-7 stage. I have yet to see any kudzu bugs. At this time last year, soybeans were covered with kudzu bugs (below left). Although soybeans in my early plots look good, scout your early crop for signs of insects, such as grasshoppers, threecornered alfalfa hoppers, kudzu bugs, and any other insect that likes to feed on vegetative soybeans. Many different species injure soybeans. We saw one Japanese beetle (below center) and one snail (below right) this week. Slim pickings, but that's good.



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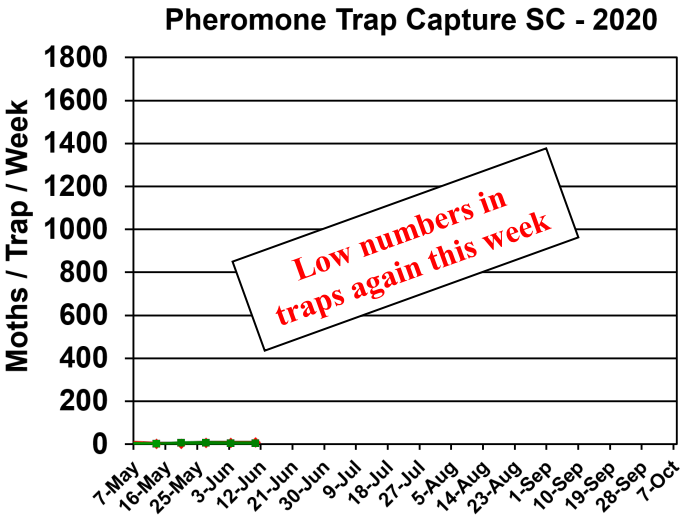
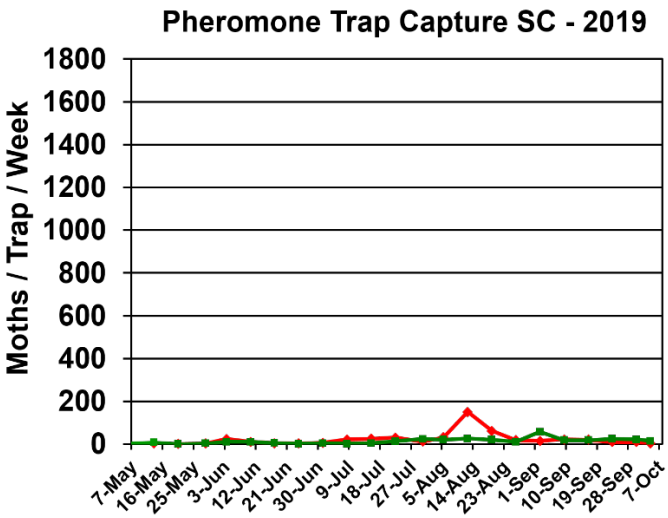
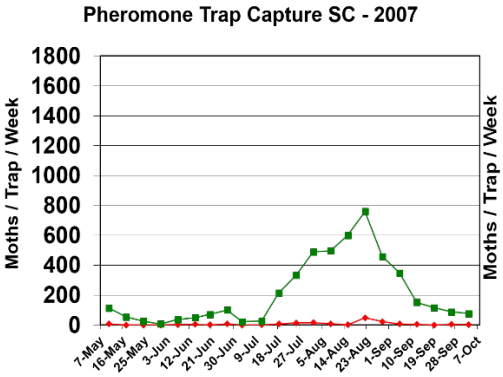
Bollworm & Tobacco Budworm

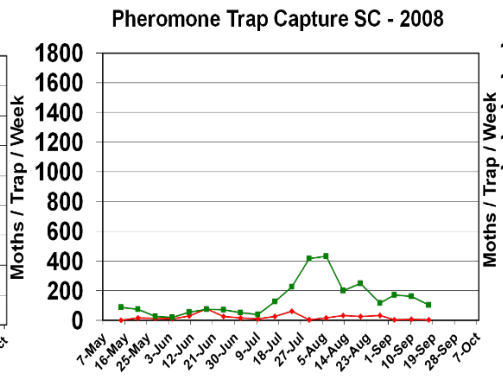
Captures of bollworm (BW) and tobacco budworm (TBW) moths in pheromone traps at EREC this season are shown below, as are the captures from 2007-2019 for reference. Tobacco budworm continues to be important for our soybean acres and for any acres of non-Bt cotton. I provide these data as a measure of moth presence and activity in our local area near my research plots. The numbers are not necessarily representative of the species throughout the state.

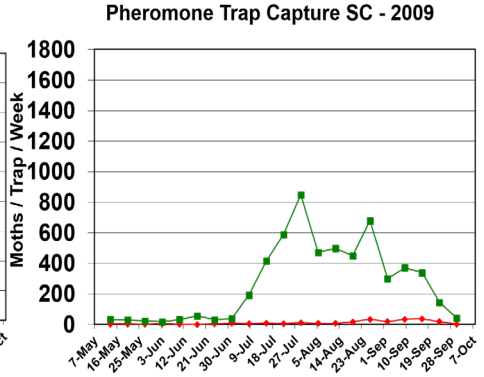




Trap data from 2007-2018 are shown below for reference to other years of trapping data from EREC:







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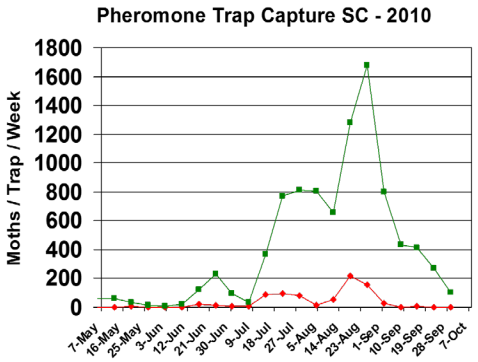

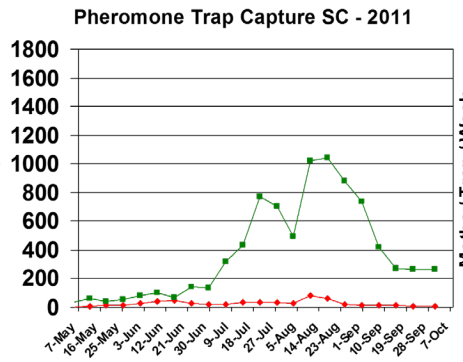

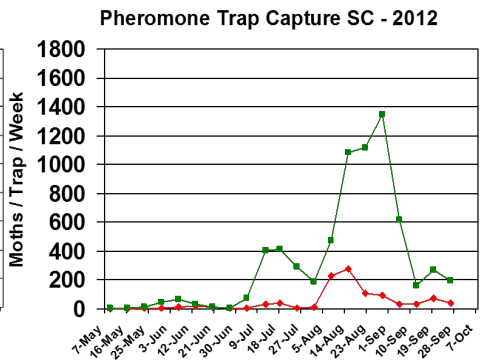

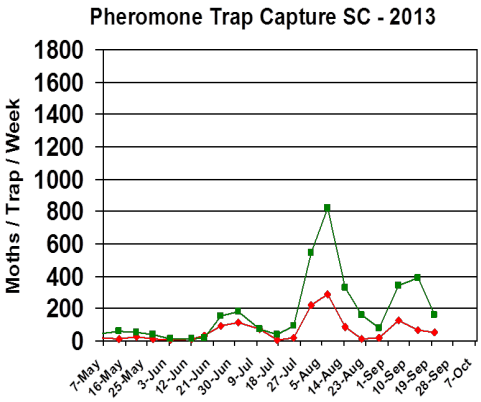

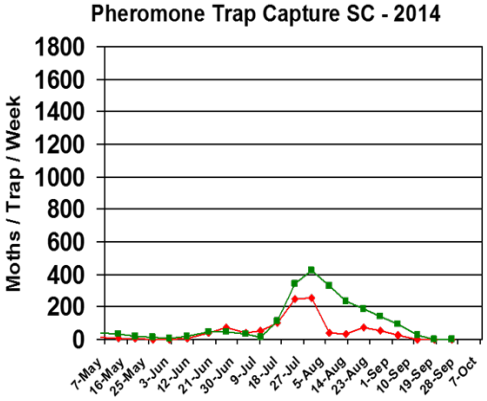

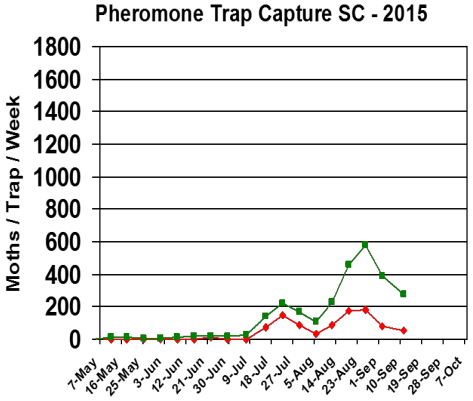

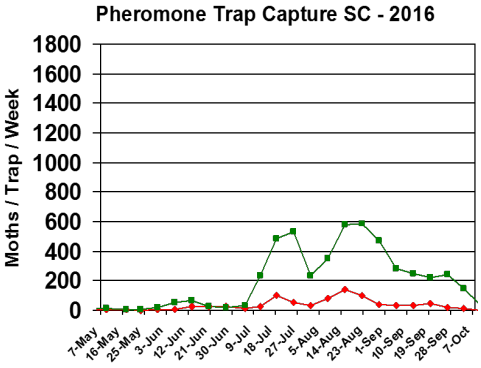

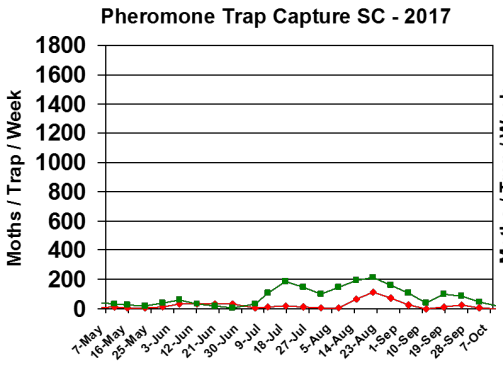

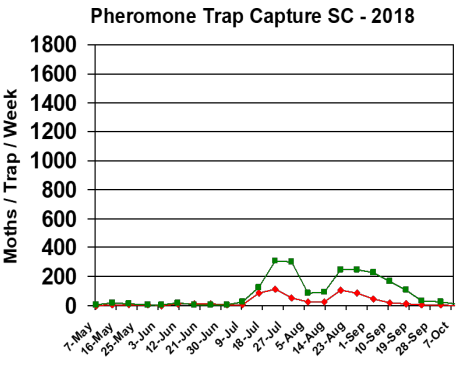

Pest Management Handbook – 2020

Insect control recommendations are available online in the 2020 South Carolina Pest Management Handbook at:
https://www.clemson.edu/extension/agronomy/pest%20management%20handbook.html

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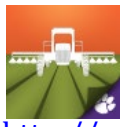
Free Mobile Apps: "Calibrate My Sprayer" and "Mix My Sprayer"



Download our free mobile apps called "Calibrate My Sprayer" and "Mix My Sprayer" that help check for proper calibration of spraying equipment and help you with mixing user-defined pesticides, respectively, in custom units (available in both iOS and Android formats):
http://www.clemson.edu/extension/mobile-apps/

Need More Information?

For more Clemson University Extension information: http://www.clemson.edu/extension/

For historical cotton/soybean insect newsletters:
https://www.clemson.edu/extension/agronomy/cotton1/newsletters.html

Sincerely,

Jeremy K. Greene, Ph.D.
Professor of Entomology

Visit our website at:
http://www.clemson.edu

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